

CLAIMS

1. A drug delivery device (1) for delivering to a patient a drug composition from a container (10) which contains the drug composition, the container adapted to be placed in a dispensing mode thereof on application of an actuating condition thereto, wherein the device comprises:-

- a dispensing unit (5) adapted to receive the container, the dispensing unit having an actuating mechanism (51) operable to apply the actuating condition to the container and an outlet (59) through which the drug composition is dispensable from the device; and

- a removable casing unit (3) for the dispensing unit;

and wherein:-

- the dispensing and casing units have securing features (21a,21b;41a,45) for releasably, fixedly securing the units together; and

- the dispensing unit is operable to apply the actuating condition to the container when fixedly secured to the casing unit and when independent from the casing unit.

2. The device of claim 1, wherein the casing unit is movable between a closed state in which it is able to enclose the dispensing unit with the container received therein, and an open state which enables the actuating mechanism of the dispensing unit to be operated to apply the actuating condition to the container and for the resultant dispensed drug composition to be discharged from the outlet.

3. The device of claim 1 or 2 which is hand-held.

4. The device of claim 3 in which the device is adapted to be held by the casing unit when assembled with the dispensing unit.

5. The device of any one of claims 1 to 4 in which the dispensing unit is adapted to be hand-operated to apply the actuating condition to the container.

6. The device of claim 5 adapted so that, when the casing unit is held by a hand of a patient, the hand of the patient is also able to operate the actuating mechanism of the dispensing unit.
- 5 7. The device of any one of the preceding claims wherein the actuating condition is movement of a first part (16) of the container relative to a second part (14) and the actuating mechanism of the dispensing unit is able to effect said relative movement.
- 10 8. The device of claim 7 wherein the actuating mechanism of the dispensing unit is adapted in use to hold the second part of the container stationary and to allow the first part to move relative thereto.
- 15 9. The device of any one of the preceding claims wherein the container has a plurality of doses of the drug composition and is fitted with a dose counter mechanism (12), and wherein the dispensing unit has a dose counter advancing mechanism (61) adapted in use to advance the dose counter mechanism when the actuating condition is applied by the dispensing unit to the container.
- 20 10. The device of claim 9 when appended to claim 7 or claim 8 in which the dose counter advancing mechanism has a mechanical feature which engages the dose counter mechanism to advance it on relative movement of the first part of the container to the second part thereof.
- 25 11. The device of claim 10 in which the mechanical feature is a post.
12. The device of claim 10 or 11 in which the mechanical feature is a part of a rack-and-pinion mechanism, the other part being in the dose counter mechanism.
- 30 13. The device of any one of the preceding claims in which the outlet forms a part of a nozzle arrangement in the dispensing unit for directing the drug composition to the patient on application of the actuating condition to the container.

14. The device of claim 7, claim 8 or any one of claims 9 to 13 when appended to claim 7 wherein the second part of the container presents an outlet of the container.

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15. The device of claims 13 and 14 wherein, in use, the outlet of the container is held stationary by the nozzle arrangement.

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16. The device of claim 7, claim 8 or any one of claims 9 to 15 when appended to claim 7, wherein the second part is a valve which is moved between a closed position and an open position on relative movement with the first part.

17. The device of claim 16, wherein the container is an aerosol container with the first part a canister.

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18. The device of any one of the preceding claims including the container and the drug composition therein.

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19. The device of claim 18 in which the drug composition is for the treatment or prophylaxis of a respiratory disease or disorder.

20. The device of any one of the preceding claims which is an inhalation device or an intranasal device.

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21. A drug delivery system comprising the device of any one of the preceding claims and at least one further dispensing unit, the dispensing units being interchangeable with one another.

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22. A method of manufacturing a drug delivery device (1) for delivery of a drug formulated in a drug container which is adapted to be placed in a dispensing mode on application of an actuating condition thereto, the method comprising the steps of:-

(a) providing a dispensing unit (5) for receiving the container which has an actuating mechanism (51) for applying the actuating condition thereto and an outlet through which the drug formulation is dispensed on application of the actuating condition to the container, and

5 (b) separately providing a casing unit (3) adapted to fixedly hold the dispensing unit such that the drug is dispensable from the container by the dispensing unit when held by the casing unit.

10 23. The method of claim 23 in which the casing unit has a closed state in which it forms a protective casing around the dispensing unit and an open state in which it provides access to the dispensing unit.

24. The method of claim 22 or 23 in which the drug delivery device is hand-held and hand-operable.

15 25. The method of any one of claims 22 to 24 in which the dispensing unit is provided with at least a part of a dose counting mechanism (61).

20 26. The method of any one of claims 22 to 25 in which the drug container has a dose counter (12) and the dispensing unit has a dose counter advancing mechanism (61) for advancing the dose counter on application of the actuating condition.

25 27. The method of claim 26 in which the dose counter advancing mechanism is a mechanical mechanism.

28. The method of claim 27 in which the dose counter advancing mechanism is a mechanical member in the casing unit which interengages with the dose counter to advance it on application of the actuating condition.

30 29. The method of claim 28 in which the mechanical member is a rack-like member.

30. The method of any one of claims 22 to 29 in which the dispensing unit provides for relative movement of the container therewith and the actuating mechanism is such as to apply the actuating condition on such relative movement.

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31. The method of claim 30 in which the dispensing unit has a valve stem support (51) for receiving a valve stem (16) of a valve mechanism of the container, relative movement of the container to the dispensing unit causing depression of the valve stem for release of a dose of the drug from the container.

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32. The method of any one of claims 22 to 31 in which the outlet of the dispensing unit is an exhaust duct (59) for channeling the drug to the external environment when released from the container.

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33. A drug delivery device formed by the method of any one of claims 22 to 32.

34. A drug delivery device substantially as hereinbefore described with reference to, and as illustrated by, the accompanying FIGURES of drawings.

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35. A method of manufacturing a drug delivery device substantially as hereinbefore described with reference to, and as illustrated by, the accompanying FIGURES of drawings.